

## FOUR NEW ARIZONA LEAFHOPPERS.\*

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**Osbornellus ignavus** Ball n. sp.

Resembling *auronitens* Prov. in size and form but lacking the markings. Pale cinnamon with a broad ivory commissural stripe interrupted by two pairs of black spots. Length, ♀, 5 mm.

Vertex slightly narrower and more pointed than in *auronitens*, the face similar to that species. Venation similar to *auronitens*, the claval veins variable but usually more definitely angled posteriorly, occasionally approaching the commissure at nearly a right angle. The outer anteapical cell long and narrow and nearly parallel margined, with the nerve at the base of the fifth apical arising from it, as in *jucundus* Uhl. instead of from the subcosta beyond the junction as in *auronitens*. The three reflexed nervures neither enlarged or dark marked. Male plates together slightly long-triangular with narrow filamentous tips not as long as the plates.

Color pale cinnamon above and below, the pronotum a little darker the eyes black. A broad ivory stripe along the scutellar and commissural margins of clavus, twice interrupted with black dots on the apices of the claval nervures.

Holotype ♀, allotype ♂, and eight paratypes Aug. 23, 1931, and four paratypes July 26, 1935. All taken on the Chihuahua pine in the Chiricahua Mts., Ariz., by the writer. Paratypes in the National Museum and Kansas University collections. The big white saddle and the lack of dark on the reflexed nervures will at once separate this from all other species.

**Twiningia solitaria** Ball n. sp.

Resembling *malvastra* Ball with a longer vertex and more heavily irrorate elytra. Length ♀ 5.5 mm.

Vertex broader than in *blanda* Ball and slightly less acute, the submarginal black line more definite and farther from the white edge. Venation as in *malvastra* with about 14 black-tipped, reflexed veinlets to the costa. Female segment with the outer angles excavated, the median third roundly pro-

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\* Types in the author's collection unless otherwise specified.

duced and then cut out in a parallel margined incision half way to the base of the segment. Male genitalia similar to *blanda* the angles of pygofer armed with short curved spines.

Color creamy above and below; the pronotum slightly darker; vertex margin black lined above and below, the line on the vertex broad, interrupted at apex and faintly margining the median suture. Elytra golden subhyaline the nervures concolorous. Ivory or milky spots in the areoles, the cells throughout the median portion of the elytra rather heavily irrorate with fine black dots. The apical cells slightly smoky with a darker cloud behind the round ivory spots.

Holotype ♀, allotype ♂, and eight paratypes beaten by the writer from the Joshua Trees (*Yucca brevifolia*) north of Littlefield, Arizona, June 27, 1935, and four paratypes taken from the same plant by Dr. R. H. Beamer, August, 1935, in the Kansas University collection.

***Texanus sonorus* Ball n. sp.**

Resembling *decorus* O. and B. but much lighter with a broader vertex and a much broader front. Ashy gray with ivory on vertex and commissure, bordered by dark. Length ♀ 6 mm.; width 3 mm.

Vertex about one-third wider than in *decorus* roundly right angled, the margin rounding over either side of the slightly conical apex. Front much wider and proportionally shorter than in *decorus*. Venation similar, the vermiculations much finer and inclined to be aggregated against the ivory areas. Female segment about twice as long as in *decorus* the lateral angles rounded. The posterior margin deeply angularly excavated with a broad quadrangular notch that extends almost to base. The notch in *decorus* is less than half as long. Male valve one-third the size of that in *decorus*. The plates broader and shorter, together semicircular with a slight median notch posteriorly while in *decorus* they are angular.

Color pale ashy gray with the vertex tipped with ivory and a broad scutellar and commissural ivory stripe, the dark reticulations massed against the ivory.

Holotype ♀ and allotype ♂ taken by the writer from white sage (*Artemisia mexicana*) on the slopes of Atascosa Mt. near the Mexican border in Arizona, August 15, 1935.

***Amplicephalus atascasus* Ball n. sp.**

Smaller and with a narrower and more sharply angled vertex than in *lassus* Ball. Dirty straw with a pair of spots on vertex and another pair on scutellum. Nervures light. Length ♀ 3 mm.

Vertex slightly longer than its basal width conically rounding over to face with a right angled apex. The face as in *lassus*, the anterior femora flattened as in that species and in addition triple banded as in *osborni* Van D. Elytra covering abdomen, relatively broad, two cross nervures and a divided central anteapical, usually additional reticulation on clavus and costa and about three spurs along the cubitus between the cross nervures. Female segment rather short, slightly angularly excavated with the median fourth quadrangularly produced and roundly excavated posteriorly. Male valve enormously enlarged, the posterior margin broadly rounded, plates together not as wide as the valve, rapidly narrowing to acute apices which are not as long as the valve. The valve and plates uplifted to expose an almost circular loop of the aedeagus.

Color creamy straw washed with rusty, a pair of crescents on the disc of vertex and often six small dashes on the anterior submargin, scutellum with the subasal triangles and a pair of small dots on the disc dark. Elytra with smoky bands on the outer part of clavus and central part of corium. The nervures and sutures broadly ivory white in sharp contrast. The face dark with light arcs and margins. The anterior margin of vertex ivory and extending down in a point onto the face.

Holotype ♀, allotype ♂, and 6 paratypes August 16, 1935. All swept from the steep grass slopes of Atascasa Mt. east of Ruby, Arizona, by the writer. The long head and the spurs on the cubitus will at once separate this species.